REMARKS/ARGUMENTS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-29 are pending in this application. By this Amendment, Claims 1-6, 8-9, 12-13, 15-17, 20-25 and 28 are amended; and no claims are cancelled or added herewith. It is respectfully submitted that no new matter is added by this Amendment.

In the outstanding Office Action, Claims 1-3, 8, 12, 13, 16, 20-22, 24, 28 and 29 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,862,264 to Ishikawa in view of U.S. Patent No. 5,703,965 to Fu, U.S. Patent No. 5,495,538 to Fan and U.S. Patent No. 6,229,578 to Acharya; Claims 4-6, 15, 25 and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishikawa in view of Fu, Fan, Acharya, and U.S. Reissue Patent No 35,414 to Murakami; Claims 7 and 27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishikawa, Fu, Fan, Acharya, Murakami and in further view of U.S. Patent No. 6,621,909 to Webb; Claims 9, 10, 17 and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishikawa in view of Fu, Fan, Acharya and in further view of U.S. Patent No. 4,162,482 to Su ; Claims 11 and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishikawa in view of Fu, Fan, Acharya, Su and in further view of U.S. Patent No. 5,612,744 to Lee; and Claims 14 and 23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishikawa in view of Fu, Fan, Acharya and in further view of U.S. Patent No. 5,791,271 to Futamura.

The applied art does not teach or suggest extracting edge information which is binary information representing an edge part of the original image, obtaining density information of an edge removed image from the original image by removing the edge part using the edge information, and obtaining coded density information by coding the density information of the edge removed image according to a second coding algorithm, as recited in Claim 1.

In contrast, Ishikawa is directed to obtaining a smoothed image (see, e.g., step 11 of Figure 1) and then an edge image is obtained by subtracting the smoothed image from the original image (see e.g., step 14, and the edge image GE). After the edge image is obtained, coding is performed. During image decoding, the edge image and the smoothed image are combined to output a restored image (see e.g., step 23 of Figure 1). Acharya does not provide the features missing in Ishikawa.

Specifically, Acharya discloses a method for removing noise by distinguishing between edge and non-edge pixels. All pixels classified as edge pixels are subjected to a second noise removal technique different from a first technique. That is, the first noise removal technique is for pixels classified as non-edge pixels and a second noise removal technique for pixels classified as edge pixels. As discussed in Column 9 of Acharya, the edge pixel needs to retain the values of neighboring pixels that are also edges. When two different edge features are adjacent and have pixels adjacent to each other, then it is necessary to discriminate between them so that the wrong intensity value is not averaged together with the pixel under consideration. Thus, it is desirable to average together neighboring (adjacent) pixels that are both edge pixels and have similar intensity values with the pixel considered for noise removal. Accordingly, Acharya teaches an edge preservation/enhancement technique by removing noise, but does not disclose obtaining density information of an edge removed image.

According to the features recited in for example Claim 1, the edge information, which is binary information, is extracted and the density information of an edge removed image is obtained using the edge information. Then, encoding is performed. During decoding, each of the edge information and the density information of the edge removed image is obtained by decoding, and the edge part of the edge removed image is restored by using the edge information.

Additionally, the applied art does not teach or suggest an edge restoring part for restoring the edge part of the edge removed image by using the edge information such that a reproduced image is obtained, as recited in for example, Claim 16. Instead, Ishikawa discloses that fractal decoding is accomplished based on the code data DF obtained by fractal image compression to obtain a restored smoothed image RF. Reversible decoding is accomplished based on the code data DE obtained by reversible image compression to obtain restored edge image RE. The final restored image RE is obtained by combining the restored smoothed image RF and the restored edge image RE.

Moreover, it is respectfully submitted that there is no basis in the teachings of either or to support their applied combination. Certainly, the outstanding Office Action fails to cite to any specific teachings within either reference to support the applied combination. Thus, it is respectfully submitted that the combination of Ishikawa with Acharya is the result of hindsight reconstruction in view of the teachings of the present specification, and is improper. The Office Action asserts on pages 5 and 6, with respect to the alleged motivation to combine the references that the motivation for doing so would have been to reduce the size of the compressed edge information since binary image typically has a larger compression ratio. This allegation is a prime example of impermissible hindsight reasoning.

Again, the independent claims recite that the edge information is binary information and density information is obtained of an edge removed image from the original image by removing the edge part using the edge information, and coded density information is obtained by coding the density information of the edge removed image according to a second coding algorithm. However, Ishikawa provides no teaching or suggestion for how one of ordinary skill in the art would perform analysis of the binary edge information. Again, Ishikawa is directed to obtaining a smoothed image and then an edge image is obtained by subtracting the

smoothed image from the original image. Thus, <u>Ishikawa</u> does not provide enabling disclosure for a system that can analyze binary edge information.

Accordingly, it is respectfully submitted that the combination of the applied art is a result of hindsight reconstruction in view of the present specification, and is improper.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 1-29 is patentably distinguishing over the prior art. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.

Respectfully submitted,

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